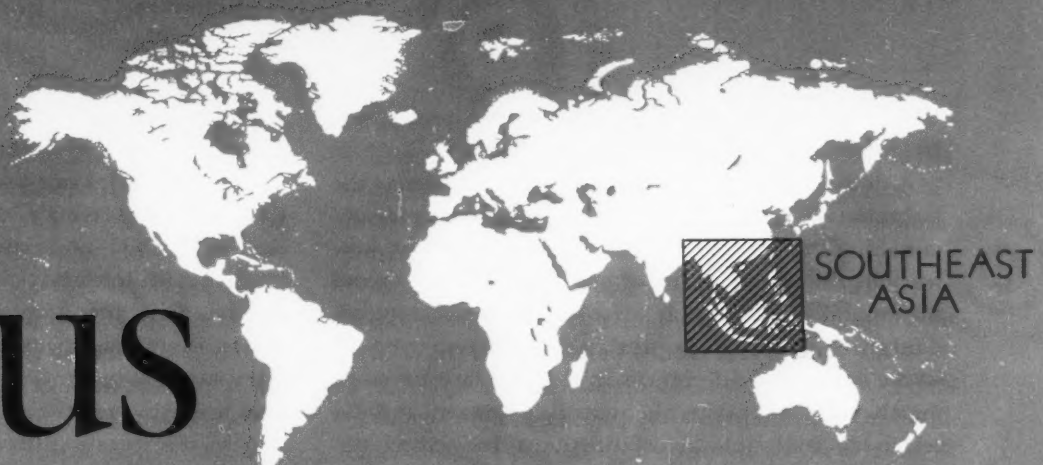

focus

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ALICE TAYLOR, EDITOR

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Resources of the Tropics: III—*Southeast Asia**

For centuries the Asiatic tropics were to the Westerner merely a remote spot on the globe, the home of the spices. Only in the last hundred years has this region emerged as a major producer of world commodities. The reasons for its rise are many. Demands of the industrializing Western countries for foodstuffs and raw materials were becoming ever greater. Tropical Asia, with its stable colonial rule and its reliable and cheap labor, offered greater advantages for Western enterprise than tropical America under the political and economic conditions that prevailed in the nineteenth century. Moreover, the Suez Canal had shortened the distance to the main Western markets and thus lessened the advantage of proximity that the "West Indies" had formerly had over the "East Indies." As a result of this shift in competitive advantage, the production of several native American plants, such as *Hevea brasiliensis* (rubber) and cinchona (quinine), was transferred to Southeast Asia, where they gained almost a monopoly on the world market. Scarcely less remarkable was the expansion in other crops, either native or imported from Africa or from other parts of Asia, such as sugar, rice, copra, kapok, tea, hard fibers, and palm oil, and in minerals such as tin and petroleum.

The Second World War meant the end of this chapter and the beginning of a new one, of which only the first paragraph has been written. Southeast Asia, in contrast with tropical America and Africa, was a theater of war, with all the disruption and destruction that are part of such a tragedy. To make up for the loss of Southeast Asian products during that period, cultivation of various crops was started or expanded in other tropical regions, and many synthetic substitutes were developed. The postwar revolutions, civil wars, and peasant insurrections, and the instability and inexperience of new governments, have further hindered rehabilitation. Today, Southeast Asia cannot boast any longer of being the chief tropical treasure house of raw materials. Whether it will regain its paramount position depends as much on its own political and economic development as on progress in other tropical areas.

Southeast Asia occupies a strategic position where the Pacific and Indian Oceans converge at the Strait of Malacca, which rivals the Panama and Suez Canals as a key to sea power. Great-circle air routes from the North American West Coast to the Orient find here their terminus, where they meet the routes from Europe to Australia. Add to this the location between the old and now-reviving culture hearths of India and

* Includes Burma, Thailand, Malaya, Indochina, Indonesia, British North Borneo, Sarawak, Brunei, Netherlands New Guinea, and the Philippines.

China, and it is clear that Southeast Asia's destiny will be shaped by more than local forces.

A dominant fact in the natural environment is the fragmentation of the lowlands by either seas or mountains. Extensive plains at one time existed where now we find shallow seas, but the present plains beyond the coastal swamps are relatively small and scattered. The climate, though tropical, is not uniform over the whole area. The differences in temperature between the always warm plains of equatorial Sumatra and the relatively cool uplands of northern Indochina obviously condition natural vegetation as well as agriculture; but even on a day's ride from Djakarta, on Java's coastal plain, southward to Bandung, in the highlands, a distinct zonal arrangement of crops is noticeable, from rice and rubber at sea level to tea and cinchona in the uplands. However, the chief differentiating climatic factor within the region is rainfall, both in amount and in seasonal distribution. As the map shows, a long dry season prevails in the northwestern and southeastern section of Southeast Asia. The savannalike lands of interior Burma and of islands such as Timor (near Australia) stand in marked contrast with the dense and dank equatorial forests of Borneo and reflect clearly the differences in available moisture.

These contrasts also affect crop production, though in the more advanced regions reservoirs and irrigation works mitigate the handicap of a long dry season. But rain is not all gain. The constant percolation of rain water through the soil tends to leach out the plant nutrients from the top layer.

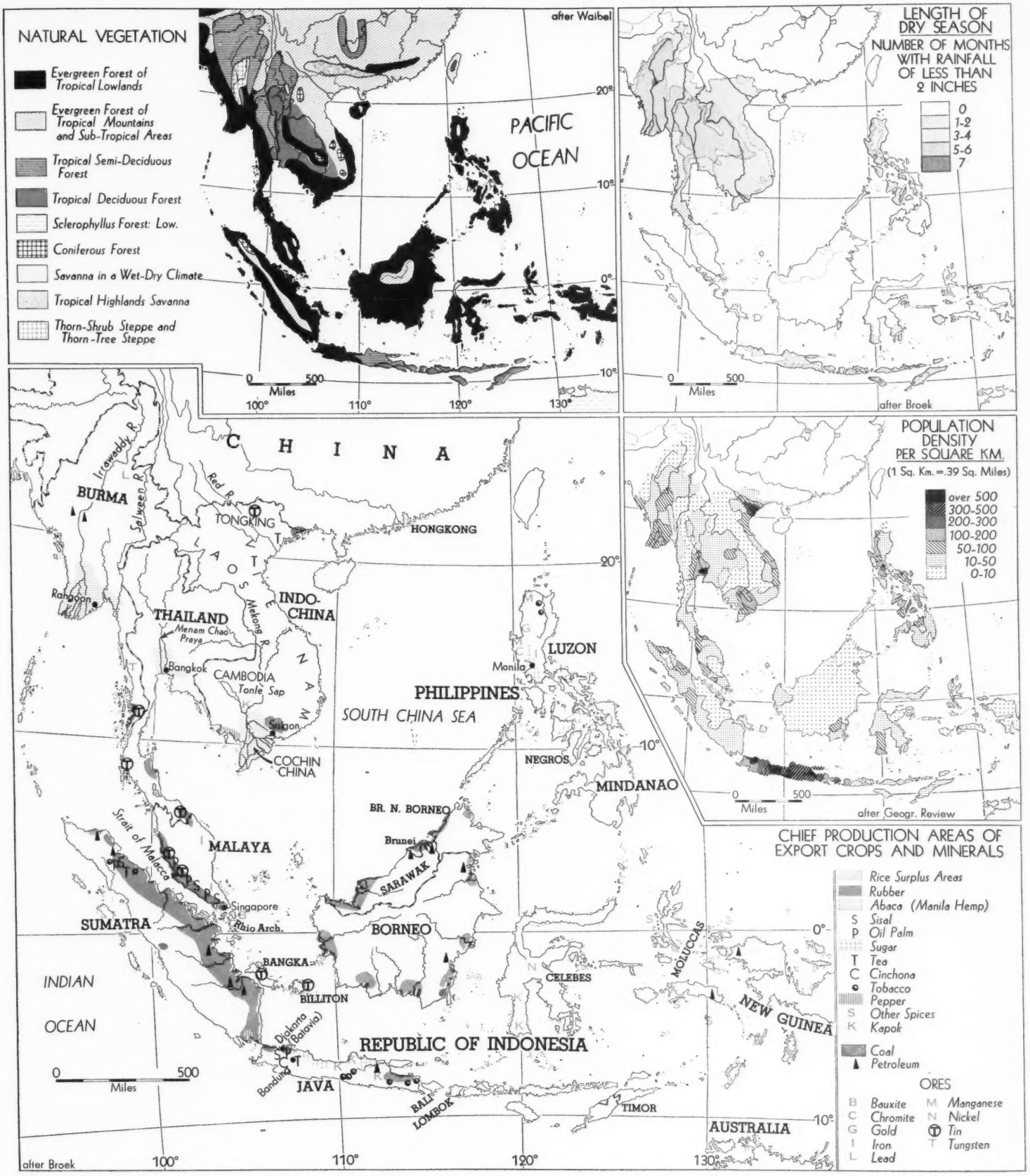
Lands enriched by recent volcanic or alluvial deposits are usually more fertile than old, worn soils. This is at least part of the reason why there are great contrasts in population density between islands such as Java or Luzon on the one hand and Borneo on the other. But historical circumstance must not be overlooked. The Red River delta in Tongking (northern Viet Nam) has supported for many centuries a dense population, thanks to its intensive water management in Chinese fashion, whereas the delta of the Mekong in Cochinchina is still in part an agricultural frontier. Java had a population of about 5 million people in 1815; now it sustains more than 50 million, with a density of more than 1,000 per square mile—a result of natural growth in a period of peace and relative prosperity.

Most of the 170 million people of Southeast Asia are tillers of the soil. Their methods of land use differ widely. The advanced peoples have permanent fields, on which paddy (wet rice), yams, corn, and similar staple food crops are raised. This type of intensive agriculture on farms of only a few acres is characteristic of the well-populated delta lands of the mainland, certain lowlands of the Philippines, the islands of Java, Bali, and Lombok, and parts of other Indonesian islands. Elsewhere, especially in the hilly and mountainous regions, a backwoods kind of agriculture prevails. Here fields are merely temporary clearings in the forest, cultivated for a year or two, and abandoned for a fresh clearing when the meager soil fertility has been "creamed off." The crops are much the same as those elsewhere, but upland rice, if grown, must depend on direct rainfall instead of flooded fields.

The penetration of world trade into these more or less self-sufficient peasant economies brought great changes. In the more advanced regions the peasant was induced to grow commercial crops in addition to his food staple. Where Western estates were established, the peasant often became a wage earner or tenant completely dependent on the commercial production process, especially if no supplementary foreign labor (Indians, Chinese) was imported. Nevertheless, it is still true that the mass of farmers seek first and foremost to produce food for their families, with little land, very little capital, and much labor. This results necessarily in a low output per worker, and thus a low income. Yields per acre are small. For instance, the yield of rice is on the average only 1,200 pounds per acre, one-third as much as in Japan. In such an economy there is little reserve strength for raising the level of living.

Other obstacles in the way of progress are the strong communal traditions, which make it hard for the progressive individual to adopt more profitable production methods. Yet, increasing the production of foodstuffs and of export commodities is of crucial importance, because the population is growing rapidly and funds from exports must pay abroad for the needed services, machinery, fertilizer, tools, and textiles and other consumers' goods not provided at home.

The capital investments and technical services formerly supplied by the colonial powers must now be replaced by new forms of assistance acceptable to the independent peoples of Southeast Asia. This important task of international cooperation has been undertaken by various agencies of the United Na-



Maps drawn by Vincent Kotschar

tions and of the United States' foreign-aid programs, and by the Colombo Plan of the British Commonwealth and Empire. Foreign technical assistance aims at improvement of education and health, development of transportation and manufacturing, and expansion of agriculture, fishing, and mining, to mention only the chief endeavors.

For a generation rubber has been one of the main props of the economy. Postwar demands and the Korean war stimulated rubber production, and output rose to twice the prewar total. Tropical Asia (including Ceylon) has maintained its dominant position, furnishing 95 per cent of world production. Since the war, Indonesia (Sumatra, Borneo, and Java) has taken over first rank from Malaya. Together these two countries provide three-fourths of the world's supply. Originally the hevea plant was introduced and grown on estates operated by Westerners, but the peasant caught on quickly to the profits to be derived from the cultivation of this hardy tree; and at present more rubber is tapped by native smallholders than by plantation owners. Natural rubber is the lifeblood of Malaya and Indonesia; the sharp drop in rubber prices after the Korean war and the unequal competition with United States government-owned synthetic-rubber plants constitute a severe threat to the economy, and even the political stability, of these countries.

The cinchona tree, another native of South America, still the main source of quinine, is grown in forestlike plantations on the volcanic slopes of western Java. Because the cultivation of cinchona and the extraction of quinine require special skill, production has remained pretty well in the hands of Western estates. The present output is much smaller than in prewar days.

Manila hemp, or abacá, the fiber obtained from an indigenous variety of banana, is produced almost entirely in the Philippines, more particularly on the eastern margins of the southern islands. Here again, production is smaller than before the war, and competition from Central America has made a dent in the former monopoly. Agave plants, yielding such hard fibers as sisal and cantala, were introduced from Middle America some forty years ago on estates in Java, Sumatra, and Malaya, with excellent results. Before the war Southeast Asia contributed almost one-third to the world's trade in these fibers, but destruction and neglect in war and postwar years have caused a serious decline: of the greatly increased world output, no more than 3 per cent now originates in tropical Asia.

Almost all of the world's first-quality kapok and much of its white and black pepper come from Indonesia and Indochina. Present everywhere in the coastal lowlands of the Asiatic tropics is the coconut palm. Its domestic uses, from root to leaf and from flower stalk to nut, are legion. Its main commercial product is copra, the dried meat of the nut, which contains a high percentage of vegetable oil. Most of the world's export—now about on the prewar level—comes from the broad marine-tropical zone stretching from Ceylon eastward far into the Pacific, but Southeast Asia alone supplies two-thirds of this amount.

Rice is another commodity that deserves special mention. Southeast Asia is in a minor league compared with China, India, and Pakistan, but it is of critical importance notwithstanding, because it has a surplus available for export to Asian food-deficit areas. The relatively sparsely populated delta lands of Burma, Thailand, and southern Viet Nam are the rice granaries to which other Asian countries look for extra food. Unfortunately, civil unrest in Burma and Viet Nam has hampered a return to prewar production levels, which have not been reached even in the current rice boom in Thailand. Sugar cane, a very old crop of the Asiatic tropics, is widely grown in gardens for sweets. Commercial production is generally small as compared with that of Middle America; only in the Philippines, especially central Luzon and Negros, is sugar cane raised for export.

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Other crops grown mainly or partly for export are oil palm (western Sumatra, Malaya), tea (Java, western Sumatra), tobacco (northern Luzon, western Sumatra, Java), coffee (Java), and cassava, or manioc (Indonesia), from which tapioca is made.

The forests covering much of the area have always been an important adjunct of native life. Fuel, lumber and other construction materials (bamboo, rattan), fruits, spices, resins, and so on are gathered, and some of these enter world trade. The great variety of tree species per acre has until now defied large-scale commercial exploitation by lumber companies. Only teak, which occurs in relatively pure stands in northern Thailand and adjacent areas, and also in Java, is a significant export. The rapid growth of vegetation would make the area ideal for pulpwood production, but until now the short fiber of the hardwoods has been an obstacle; when technology masters this problem, the tropical forests in their more accessible parts will doubtless become a major resource.

The seas, too, have been an essential part of the life of almost all peoples in these seagirt lands, and fish is a traditional food. Here, where beef cattle are scarce, dairying is virtually unknown, and the pig is an unclean animal for Moslems, fish is doubly important as a source of animal protein. But traditional methods of fishing, transportation, and conservation limit the catch to coastal zones and inland waters and restrict the consumption of fresh fish. Yet these seas are rich in fish. Japanese fleets have shown what can be done with modern efficient methods on the high seas. If these methods were widely adopted, it should be possible to increase greatly the supply of fish. In addition to coastal fishing, there is much fresh-water fishing: Tonle Sap in Cambodia is famous for its abundance of fish. In Java and Thailand fish are actually bred, fattened, and "harvested" in numerous ponds.

Mineral exploitation has been almost exclusively the business of foreigners; even the labor force consists in part of imported workers, especially Chinese. Tin and petroleum are the chief commodities. Tin is extracted in a zone from southern Burma and Thailand through the Malay Peninsula to the islands of Bangka and Billiton. Southeast Asia produces more than 55 per cent of the world's tin, with Malaya and Indonesia contributing respectively 32 and 18 per cent.

In world terms, Southeast Asian petroleum appears a minor item, since only about 2.5 per cent of the total annual crude-oil production originates here. However, this supply looms large in the petroleum-poor Far East. The main oil fields are in eastern Sumatra and northern and eastern Borneo; minor ones are in central Burma and eastern Java. Netherlands New Guinea is now in the early stages of exploitation. Bauxite—aluminum ore—is mined on a large scale in the Rhio Archipelago, just south of Singapore; manganese, gold, and chromite in the Philippines; lead and silver in upper Burma; tungsten in the Malay Peninsula; and some nickel in Celebes. Iron-ore deposits are widespread, and some are under exploitation in Malaya and the Philippines. Coal is scarce and generally of low quality. Tongking has, however, near the coast, excellent anthracite, which is shipped out to various Asian

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